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ABSTRACT

This study illustrates the convergence of two teaching and learning media, face-to-face and online, as reflective lecturers seek to address the limitations of a single medium. Innovative university lecturers at a large Western Australia university were interviewed about their use of online environments with face-to-face students. The interview data revealed a set of problems in the traditional face-to-face situation for which the lecturers sought solutions using the online environment. Three types of problems were identified, i.e., a need to: improve the access to essential unit information; increase the amount and quality of student interaction; and increase student autonomy. The lecturers identified and implemented three strategies for solving these problems. These included using the World Wide Web to: (1) disseminate and collect information and materials; (2) mediate student-student interactions; and (3) mediate student learning. While the first strategy was successful in increasing access to essential unit information, the second strategy did not necessarily increase the amount or quality of student interaction. It appears that interactivity is dependent on the nature of the learning activity undertaken and lecturers' competencies in facilitating online learning, independent of the medium in which the task is set. The success of the third strategy involved the redevelopment of a traditional lecturer-dependent course to embrace more student-centered approaches. (Contains 10 references.) (Author/MES)

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WHY USE THE ONLINE ENVIRONMENT WITH FACE-TO-FACE STUDENTS? INSIGHTS FROM EARLY ADOPTERS

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Abstract

This study illustrates the convergence of two teaching and learning media, face-to-face and online, as reflective lecturers seek to address the limitations of a single medium. Innovative university lecturers were interviewed about their use of online environments with face-to-face students. The interview data revealed a set of problems in the traditional face-to-face situation for which the lecturers sought solutions using the online environment. Three types of problems were identified: a need to improve the access to essential unit information; to increase the amount and quality of student interaction; and to increase student autonomy.

The lecturers identified and implemented three strategies for solving these problems. These included using the web to:

- *Disseminate and collect information and materials;*
- *Mediate student-student interactions; and*
- *Mediate student learning.*

Whilst the first strategy was successful in increasing access to essential unit information, the second strategy did not necessarily increase the amount or quality of student interaction. It appears that interactivity is dependent on the nature of the learning activity undertaken and lecturers' competencies in facilitating online learning, independent of the medium in which the task is set. The success of the third strategy involved the redevelopment of a traditional lecturer-dependent course to embrace more student-centred approaches.

Keywords

mixed mode, online learning, student-centred teaching, self-directed learning, online supplementation

Introduction

The World Wide Web (WWW) challenges traditional campus-based education to be more flexible and innovative in its delivery. Content and activities can be placed on the WWW for students both as a supplement to lectures and as a replacement of them. In addition, students can independently search the WWW to access relevant content as well as use it to communicate with each other and the lecturer. All this can be accomplished off-campus and at a time that is convenient for the student.

Much of the literature reports on the use of online environments with geographically dispersed students (for example Berge & Collins, 1996; Kearsley, 2000; Palloff & Pratt, 1999). This use

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offers obvious communication advantages over traditional distance learning modes. But lecturers are increasingly using the WWW with students who have elected to come on-campus to study (Palloff & Pratt, 2001), indicating that its use may also enhance face-to-face teaching.

How does use of the WWW alleviate some of the problems university lecturers perceive in typical face-to-face teaching? This question was explored by interviewing innovators and early adopters about their use of online environments with face-to-face students and by examining the web materials, including the online tasks, associated with each unit.

Methodology

Semi-structured interviews were conducted by both authors with five university lecturers from the Business Faculty of a large Western Australian University. These lecturers were identified by their colleagues as innovative leaders and reflective practitioners in teaching and in using online environments. Typically, these lecturers had been teaching 'on-campus' face-to-face units consisting of a one-hour lecture and a two-hour lab or workshop weekly over a 14-week semester. Several of the lecturers also taught in offshore programmes where their unit was delivered in one or two short intensive blocks of face-to-face teaching.

Of the five lecturers interviewed, four were from the same curriculum area: information systems. This is an area where the web is a significant medium. The lecturers were very knowledgeable about the web and confident to explore the use of the online environment as a vehicle for their teaching. Between the five lecturers, there were eleven units in which they supplemented their face-to-face teaching with online components. Three of these were at postgraduate level.

Through a series of open-ended questions detailed in Table 1, these lecturers were encouraged to discuss their decisions relating to the use of the online environment with face-to-face students and their subsequent experiences of teaching the unit/s using the online components. In addition, the associated web materials, online tasks and web-based student interactions for each unit referred to the interviews were examined.

1.	What is the online component of your unit?
2.	What other resources do your students have?
3.	What do you want your students to get from the online component?
4.	What feedback have you had from students?
5.	What do you feel has been the value of online?
6.	How have the online components impacted on the depth of learning?

Table 1: The key interview questions

During the interviews, which lasted for approximately one hour, both authors took notes and used reflective listening techniques to check their interview notes during the interview process. These notes were compared after the interview, combined into one interview report and then checked for accuracy with the interviewee. The final agreed interview report was then used for the analysis. The online components discussed in the interview were examined both during the interview with the lecturer and were revisited afterwards for further observation and analysis.

The data from the interview were considered in relation to the associated online components. Data analysis was conducted through the comparison of the intended function of the online components with each lecturer's perceptions of the final outcomes.

Findings and Discussion

As O'Donnell (cited in Edwards & Fritz, 1997), notes " the best way to view information technology is to let it address the problems we already have" (p. 3) and this certainly happened

with these innovators. Through question three, the interview data revealed a set of problems in the traditional face-to-face situation for which these lecturers sought solutions using the online environment. Analysis of the problems revealed three types. The first type of problem was categorised by a need to improve the access to essential unit information. The second type was categorised by a need to increase the amount and quality of student interaction in a unit. The third type of problem was categorised by a need to increase student autonomy. Did the addition of online components serve the function intended by the lecturers?

The Need to Improve Access to Essential Unit Information

The first category of problems was characterised by a need to increase student access to materials and information held by the lecturer. This included essential unit information such as unit outlines and assessment details; lecturer contact details and availability; late-breaking news; application software; lecture slides; learning guides; and answers to common student questions. In addition, lecturers sought to get information back from students in a manageable format. The impact of these problems was magnified with offshore students. To address these problems, the web was used to disseminate and collect information.

Lecturers found that publishing unit information and materials normally disseminated in face-to-face sessions reduced the number of individual enquiries for these materials. For example, late enrolling students were able to access essential unit information and students who had missed lecturers and workshops were able to access notes and handouts from the relevant sessions. Publishing the lecturer slides was additionally beneficial as students used them as guides for further study, as sources of examples, and as guides to the key points for revision. The use of the web in this adjunct mode provided the students with an alternative way of accessing information presented in the face-to-face mode. Edwards and Fritz (1997) have noted correlations between access to material and student perceptions of independent learning and mastery. Providing increased access to materials is one way to enhance the effectiveness of the teaching.

Much time in face-to-face sessions is taken up with course administration involving he collection and dissemination of information. By using the web to make application software available for download instead of distributing the software in the first workshops, as previously was the case, workshop time was reclaimed for learning tasks. Another lecturer reclaimed valuable face-to-face time by using online forms to collect unit management data such as the membership of collaborative groups and unit evaluations. In addition, students were able to submit and share with the whole class relevant annotated web links.

The web was also used successfully to update information for students. Both email and discussion boards were used to give the students increased access to the lecturer and to each other. Common or trivial questions were answered through separate 'frequently asked questions' (FAQs) boards to which students were also encouraged to post their questions. This resulted in two advantages to the lecturer: often another student answered the question before the lecturer got to see it, and because of the public nature of the posting of the question and answer, the number of emails asking the same question was reduced.

All the lecturers reported that their online materials made the preparation, management and delivery of their face-to-face teaching much more efficient. Further, by providing appropriate resources on the web site, lecturers were able to direct offshore students to prepare for intensive blocks of face-to-face teaching. Similarly, students and lecturer could stay in touch after the teaching block was completed through to completion of the unit. In addition, lecturers were able to selectively access the resources on the web site for supplementary purposes as necessary.

These findings suggest that the web can provide solutions to problems in face-to-face teaching characterised by a need to improve access to essential information. In this way, it can aid in unit administration, particularly in units with large numbers of students. Does this advantage in the use of supplementary online components extend to improvement in the quality of student interaction?

Problems Concerning the Need to Increase the Amount and Quality of Student Interaction and Discussion in a Unit

Two specific student-student communication problems were identified in this study. For some lecturers, the nature of the labs and workshops did not allow for much student-student interaction and they hoped to increase the interaction by providing discussion boards for use outside of contact times. For others, the level of face-to-face discussion in the workshops was often not thoughtful enough and these lecturers realised, as Palloff and Pratt (1999) suggest, that use of asynchronous discussion may increase the reflection and thoughtfulness in student discussion.

On investigation, use of the discussion boards varied in quantity and quality. Where there was no specific task required in the discussion boards, very little use was made of them. Some boards showed a certain amount of student activity, but on closer inspection, it was not interactivity, defined by Laurillard (1993). According to Laurillard (1993), interaction requires an action by the learner, followed by feedback and then a response by the learner. Action alone is not interaction and is not characterised by the same thoughtfulness as interaction. Meaningful student discussion requires extended interactions on the same topic and is an important tool for developing higher order thinking skills (Berge & Collins, 1996). Rather than sustained interaction and discussion, much of the student activity on the discussion boards reflected single responses to simple tasks that required no more than the posting of information to the board.

Some lecturers realised that in order to sustain discussion online, they needed to design tasks requiring interaction and discussion. For example, in one unit where students were required to post a thoughtful piece of work and then respond to other students' questions and comments on it, more thoughtful interaction occurred. In another unit, discussion was extended and improved where students were required to comment critically and appropriately on a limited number of topics over a longer period of time or were required to work together in groups on collaborative tasks, as suggested by Palloff and Pratt (2001).

The exceptions to this were the boards set up for postgraduate students. These students used the boards independently of any tasks set by the lecturer. Both interaction and discussion were notably higher in these units, reflecting the fact that mature students are more likely to participate and be responsible for their own learning.

Importantly, a number of the lecturers commented on the need to know and be able to use specific online facilitation skills in order for successful discussion to occur. One lecturer felt that the amount and level of interaction could have been increased had he had more expertise in online teaching. Another felt that her skills in facilitating the discussion had been an important factor contributing to the success of the discussion.

Clearly a task requiring sustained interaction is only the beginning. Lecturers must establish and maintain an appropriate climate for the discussion and develop a feel for the shape of a discussion over time. They need to be able to weave together and to summarise the debate, to draw attention to contradiction or oversights at the appropriate points in time (Paloff & Pratt, 1999) and to provide the expert voice when necessary. It would appear that both lecturers and students need to learn how to communicate and facilitate communication in the new medium.

Much as has been identified by others (Berge & Collins, 1996; Palloff & Pratt, 2001), this analysis shows that the need for staff to learn new competencies is clearly an issue as online teaching increases. Some of these skills require an understanding of complex task construction appropriate to a tertiary environment. These skills are essentially the same irrespective of the mode of teaching. Other skills however, appear to be unique to teaching online (Goodyear, Salmon, Spector, Steeples, & Tickner, 2001, Gustafson & Gibbs, 2001,) such as the communication and facilitation skills described above.

Problems Concerning the Need to Increase Student Autonomy

The third type of problem addressed dissatisfaction with current face-to-face teaching methods.

For example, delivering content via weekly lecturers was not considered appropriate where students need to develop independent learning skills including responsibility for their own learning decisions. Teaching at university is characterised by lectures and tutorials where the lecturer is the "sage on the stage" and students are often passive recipients of wisdom. According to constructivist theories of learning, students learn better when they are active agents in the learning and the teacher shifts to become the "guide on the side". As Kearsley (2000) notes, student centredness is one of the themes shaping online teaching. A change to more student-centred approaches requires changes in the student role and often a re-conceptualisation of learning. An effective way to signal this change is to change the medium of the teaching and learning processes.

One lecturer used the web to act as an intermediary between himself and the students to facilitate more student-centred approaches. The web was used to mediate student-to-task, student-to-student and student-to-lecturer interactions. The lecturer replaced the face-to-face lecturers with a downloadable learning guide, freeing himself for more student-centred work involved in facilitating the online learning. He also provided a range of authentic tasks, such as case studies and problems, that required the students to locate and use web resources and to be more responsible for their own learning. In addition the tasks required and scaffolded higher order thinking skills. As facilitator, he directed students to each other for support and information. He met face-to-face with the group only three times in the semester and used the face-to-face meetings to negotiate and discuss with the students the shift to a more independent learning style. He met at the beginning to reassure the students and check that they had the requisite access to the online materials. He then met after about four or five weeks for a 'reality check', to reinforce the cumulative nature of the learning in the course, and to reflect on the students' experiences so far. His final meeting at the end was to debrief and capture some feedback for evaluation purposes.

He noted:

> The mismatch between students' expectation and the learning experience had to be dealt with. Students found it confronting in terms of time management and harder than face-to-face.

In utilising the online environment, this lecturer did not simply augment his face-to-face teaching, but changed the entire nature of the face-to-face component. The face-to-face discussions considered how the students should approach the learning tasks in the unit and the changing roles of students and teachers in more student-centred environments, as suggested by Forsyth (1998). Reflecting his changing role, the lecturer did not deal with content in these sessions, rather he helped the students negotiate how to approach the content and tasks available online. The lecturer indicated that generally the students were successful in this more independent mode of study and enjoyed the increased flexibility and choice in the way they studied this unit.

Conclusions

In this study, innovative, reflective lecturers used the web to alleviate three types of problems in face-to-face teaching: problems caused by a finite number of scheduled face-to-face sessions, problems associated with the amount and quality of face-to-face student interaction, and thirdly problems associated with student dependence on the lecturer. Their solutions through the use of the web met with mixed success.

It appears the web can be used to publish and to communicate administrative information successfully. The lecturer has increased confidence that all students have access to the information, and valuable time in face-to-face sessions is reclaimed for learning activity. Harasim, Hiltz, Teles, and Turoff, (1995) note that use of the web in this adjunct mode is the most common use of the web in higher education.

This study indicates that using the web to mediate student interaction will not necessarily increase the amount or quality of interaction. Learning is primarily dependent on the learning activity undertaken, and not the medium that the task is set in. A well-designed task that encourages thoughtful interaction is a prerequisite. That being said, however, for the best interaction to ensue,

the lecturer needs to develop a new set of skills in facilitating discussion online to achieve the best out of the activity.

Finally, the web can be used to mediate between student and content and to support more student-centred approaches. When students access content via the web instead of the lecturer directly, lecturers can redirect their attention to supporting students' learning and deal with issues arising from the process of learning, thus helping students to become more independent learners.

In conclusion, the lecturers interviewed in this study used the web as a successful adjunct to face-to-face teaching to publish and disseminate information to students and to collect data from students. According to Palloff and Pratt (2001), use of the web in this manner is a good way for lecturers and students to enter the online environment. Whilst using the web to manage information in this way is relatively straightforward, this study suggests that use of the web to extend the opportunities for student-student interaction and student autonomy is dependent on lecturers' competencies in designing effective learning environments and tasks that will accomplish this. Moreover, whilst this is a necessary condition, it is not sufficient as lecturers also need to learn new skills in facilitating learning online.

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